

WHAT IS CLAIMED IS:

1. A 5,10,15,20-tetrapyridyl-21H,23H-porphyrinato-zinc compound having a crystal form selected from the group consisting of (a), (b) and (c)  
5 shown below:

(a) a crystal form characterized by peaks at Bragg angles ( $2\theta \pm 0.2$  deg.) of 9.4 deg., 14.2 deg. and 22.2 deg.,

(b) a crystal form characterized by peaks at  
10 Bragg angles ( $2\theta \pm 0.2$  deg.) of 7.0 deg., 10.5 deg. and 22.4 deg., and

(c) a crystal form characterized by peaks at Bragg angles ( $2\theta \pm 0.2$  deg.) of 7.4 deg., 10.2 deg and 18.3 deg.,  
15 respectively in  $\text{CuK}\alpha$ -characteristic X-ray diffraction patterns.

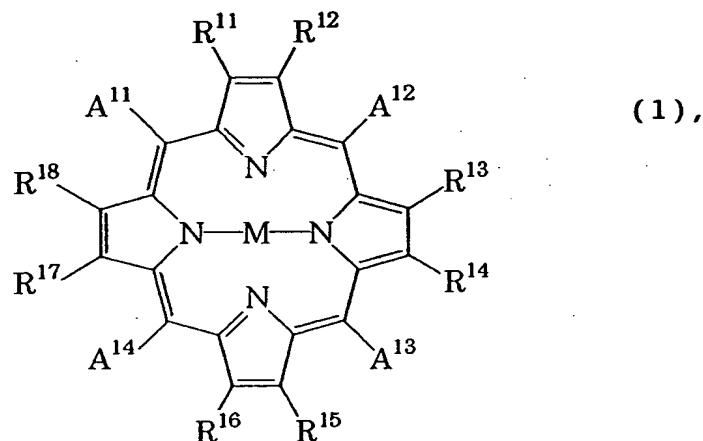
2. A 5,10,15-20-tetrapyridyl-21H,23H-porphyrinato-zinc compound having the crystal form  
20 (a).

3. A 5,10,15-20-tetrapyridyl-21H,23H-porphyrinato-zinc compound having the crystal form  
25 (b).

4. A 5,10,15-20-tetrapyridyl-21H,23H-porphyrinato-zinc compound having the crystal form

(c).

5. An electrophotographic photosensitive member,  
comprising a support and a photosensitive layer  
disposed on the support, wherein the photosensitive  
layer contains a porphyrin compound having a structure  
represented by formula (1) shown below:



wherein M denotes a hydrogen atom or a metal capable  
of having an axial ligand; R<sup>11</sup> and R<sup>18</sup> independently  
denote a hydrogen atom, an alkyl group capable of  
having a substituent, an aromatic ring capable of  
having a substituent, an amino group capable of having  
a substituent, a sulfur atom capable of having a  
substituent, an alkoxy group, a halogen atom, a nitro  
group or a cyano group; and A<sup>11</sup> to A<sup>14</sup> independently  
denote a hydrogen atom, an alkyl group capable of  
having a substituent, an aromatic ring capable of  
having a substituent or a heterocyclic ring capable of

having a substituent with the proviso that at least one of A<sup>11</sup> to A<sup>14</sup> is a heterocyclic group capable of having a substituent.

5           6. A photosensitive member according to Claim 5, wherein the porphyrin compound is a 5,10,15,20-tetrapyridyl-21H,23H-porphyrin compound represented by the formula (1) wherein each of A<sup>11</sup> to A<sup>14</sup> is a pyridyl group.

10

7. A photosensitive member according to Claim 6, wherein the 5,10,15,20-tetrapyridyl)-21H,23H-porphyrin compound has a crystal form characterized by a Bragg angle ( $2\theta$ ) in a range of  $20.0 \pm 1.0$  deg. in a CuK $\alpha$ -characteristic X-ray diffraction pattern.

15

8. A photosensitive member according to Claim 7, wherein the 5,10,15,20-tetrapyridyl)-21H,23H-porphyrin compound has a crystal form characterized by peaks at Bragg angles ( $2\theta \pm 0.2$  deg.) of 8.2 deg., 19.7 deg., 20.8 deg. and 25.9 deg.

20

9. A photosensitive member according to Claim 6, wherein the porphyrin compound is a 5,10,15,20-tetrapyridyl-21H,23H-porphyrinato-zinc compound.

25

10. A photosensitive member according to Claim 9,

wherein the porphyrin compound is a 5,10,15,20-tetrapyridyl-21H,23H-porphyrinato-zinc compound having a crystal form selected from the group consisting of (a), (b), (c) and (d) shown below:

5           (a) a crystal form characterized by peaks at Bragg angles ( $2\theta \pm 0.2$  deg.) of 9.4 deg., 142 deg. and 22.2 deg.,

          (b) a crystal form characterized by peaks at Bragg angles ( $2\theta \pm 0.2$  deg.) of 7.0 deg., 10.5 deg. and  
10   22.4 deg.,

          (c) a crystal form characterized by peaks at Bragg angles ( $2\theta \pm 0.2$  deg.) of 7.4 deg., 10.2 deg and 18.3 deg., and

          (d) a crystal form characterized by peaks at  
15   Bragg angles ( $2\theta \pm 0.2$  deg.) of 9.1 deg., 10.6 deg., 11.2 deg. and 14.5 deg., respectively in  $\text{CuK}\alpha$ -characteristic X-ray diffraction patterns.

11. A photosensitive member according to Claim  
20   10, wherein the porphyrin compound is a 5,10,15,20-tetrapyridyl-21H,23H-porphyrinato-zinc compound having the crystal form (a).

12. A photosensitive member according to Claim  
25   10, wherein the porphyrin compound is a 5,10,15,20-tetrapyridyl-21H,23H-porphyrinato-zinc compound having the crystal form (b).

13. A photosensitive member according to Claim 10, wherein the porphyrin compound is a 5,10,15,20-tetrapyrridyl-21H,23H-porphyrinato-zinc compound having  
5 the crystal form (c).

14. A photosensitive member according to Claim 10, wherein the porphyrin compound is a 5,10,15,20-tetrapyrridyl-21H,23H-porphyrinato-zinc compound having  
10 the crystal form (d).

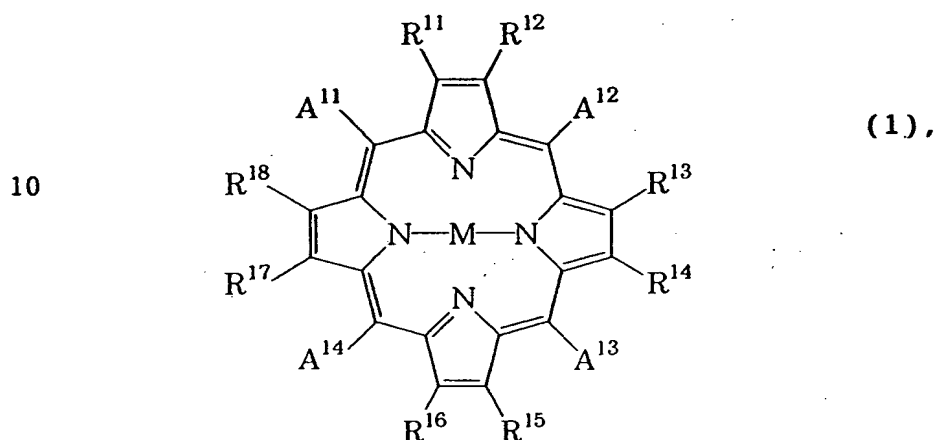
15. A photosensitive member according to Claim 5, adapted to be exposed to a laser light having a wavelength in a range of 380 - 500 nm issued from a  
15 semiconductor laser for latent image formation.

16. A photosensitive member according to Claim 5, adapted to be exposed to a laser light having a wavelength in a range of 400 - 450 nm issued from a  
20 semiconductor laser for latent image formation.

17. A process-cartridge, comprising an electrophotographic photosensitive member comprising a photosensitive layer disposed on a support, and at  
25 least one means selected from the group consisting of a charging means, a developing means and a cleaning means and integrally supported together with the

electrophotographic photosensitive member to form a unit, which is detachably mountable to an electrophotographic apparatus,

wherein the photosensitive layer contains a  
5   prophrin compound having a structure represented by  
formula (1) shown below:



15   wherein M denotes a hydrogen atom or a metal capable  
of having an axial ligand; R<sup>11</sup> and R<sup>18</sup> independently  
denote a hydrogen atom, an alkyl group capable of  
having a substituent, an aromatic ring capable of  
20   having a substituent, an amino group capable of having  
a substituent, a sulfur atom capable of having a  
substituent, an alkoxy group, a halogen atom, a nitro  
group or a cyano group; and A<sup>11</sup> to A<sup>14</sup> independently  
denote a hydrogen atom, an alkyl group capable of  
25   having a substituent, an aromatic ring capable of  
having a substituent or a heterocyclic ring capable of  
having a substituent with the proviso that at least

one of A<sup>11</sup> to A<sup>14</sup> is a heterocyclic group capable of having a substituent.

18. A process-cartridge according to Claim 17,  
5 wherein the electrophotographic apparatus includes a semiconductor laser having an oscillation wavelength in a range of 380 - 500 nm as an exposure means, and the photosensitive member is adapted to be exposed to a laser light from the semiconductor laser for latent  
10 image formation.

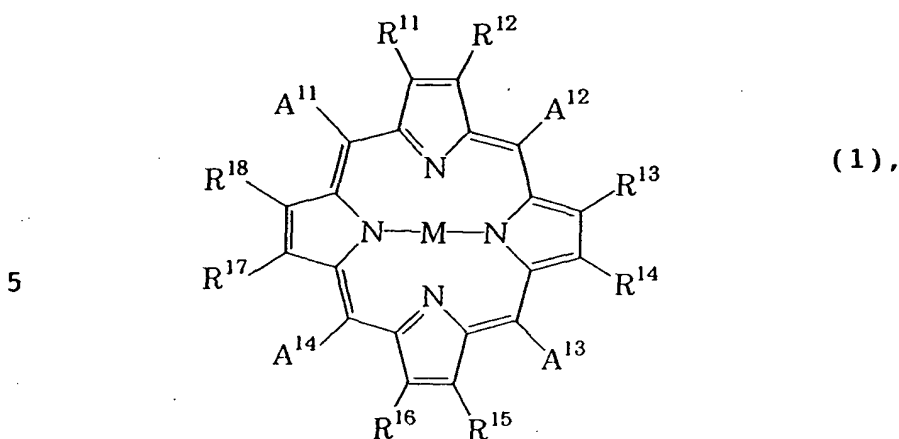
19. A process-cartridge according to Claim 18,  
wherein the semiconductor laser has an oscillation wavelength in a range of 400 - 450 nm.

15

20. An electrophotographic apparatus, comprising:  
an electrophotographic photosensitive member  
comprising a photosensitive layer disposed on a support, a charging means, an exposure means, a  
20 developing means and a transfer means,

wherein the photosensitive layer contains a porphyrin compound having a structure represented by formula (1) shown below:

25



wherein M denotes a hydrogen atom or a metal capable  
 10 of having an axial ligand; R<sup>11</sup> and R<sup>18</sup> independently  
 denote a hydrogen atom, an alkyl group capable of  
 having a substituent, an aromatic ring capable of  
 having a substituent, an amino group capable of having a  
 15 substituent, a sulfur atom capable of having a  
 substituent, an alkoxy group, a halogen atom,  
 a nitro group or a cyano group; and A<sup>11</sup> to A<sup>14</sup>  
 independently denote a hydrogen atom, an alkyl group  
 capable of having a substituent, an aromatic ring  
 capable of having a substituent or a heterocyclic ring  
 20 capable of having a substituent with the proviso that  
 at least one of A<sup>11</sup> to A<sup>14</sup> is a heterocyclic group  
 capable of having a substituent.

21. An electrophotographic apparatus according to  
 25 Claim 20, wherein the exposure means comprises a  
 semiconductor laser having an oscillation wavelength  
 in a range of 380 - 500 nm.

22. An electrophotographic apparatus according to Claim 21, wherein the semiconductor laser has an oscillation wavelength in a range of 400 - 450 nm.

5

10

15

20

25